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Varietal Description of Pasqua Spring Wheat

Origin and breeding

Pasqua, hard red spring wheat, tested as BW 114 and RL 4563, was developed at the Agriculture Canada Research Station, Winnipeg, Manitoba. Initial selection was for leaf and stem rust resistance and sprouting resistance. Pasqua was derived from the cross BW 63*2/ Columbus; BW 63 is a Neepawa derivative with four leaf rust resistance genes. Plants were selected for resistance to leaf and stem rust and to preharvest sprouting in the F_2 generation. Lines were selected for stem and leaf rust resistance and grain quality in the F_4, F_6 and F_8. Pasqua derives from a single F_6 plant. The progeny of this plant were grown in a bulk rogued increase plot each generation up to and including F_{11}. Heads were taken at random from the F_{11} increase plot. One hundred and twenty-eight of these were grown as head rows in an isolated nursery and rows which were in any way different from the norm were removed. Seed from the 120 remaining rows were bulked as Breeder seed in 1988.

Varietal characteristics

Plant characteristics

Growth habit: spring

Coleoptile color: green

Juvenile growth: erect

Leaves: medium green with slight waxy bloom; glabrous sheath and blade

Flag leaf: medium green; intermediate attitude; medium width and length; white auricles; few hairs on auricle margins; glabrous sheath; few hairs on blade; slight waxy bloom on sheath

Tillers: intermediate number

Heading: mid-season; earlier than Columbus, similar to Katepwa

Anthers: yellow

Plant height: medium; slightly shorter than Katepwa; taller than Roblin

Straw: little or no anthocyanin coloration; hollow internodes; medium thick culm neck; four nodes; slight waxy bloom on uppermost node; glabrous uppermost node; straight culm neck

Resistance to shattering: good

Tolerance to drought: good

Sprouting tendency: low to medium

Maturity: similar to Neepawa

Disease reaction: this variety is very resistant to stem rust (*Puccinia graminis*) and leaf rust (*Puccinia triticina*); moderately resistant to bunt (*Tilletia caries and T. foetida*); moderately susceptible to loose smut (*Ustilago tritici*), common root rot (*Helminthosporium sativum and Fusarium* spp.) and Septoria leaf blotch (*Septoria avenae triticea*)

Spike characteristics

Shape: strap or oblong; medium density; medium length

Attitude: erect

Color: medium green five days after heading; slight waxy bloom; white at maturity

Awns: apically awnleted

Spikelets: no supernumerary spikelets; intermediate number of spikelets per spike; intermediate number of seeds per spikelet

Glumes: medium width and length; glabrous lower glume; white; shoulder is wide and squared; obtuse, medium width beak; slight basal folds

Kernel characteristics

Color: medium red

Texture: hard

Shape: medium size, width and length; ovate to elliptical

Cheek: rounded to angular

Brush: medium size; medium length brush hairs; no collar

Germ: medium size; ovate

Crease: medium width and depth

Quality: good bread quality

Protein content: intermediate

Copies of this and related publications may be obtained from the Print Media Branch, Alberta Agriculture, 7000 - 113 Street, Edmonton, Alberta T6H 5T6 or Alberta Agriculture's District Offices.

Performance and adaptation

This line is adapted to the wheat growing area of the prairie provinces. It has very good leaf and stem rust resistance. It also has improved pre-harvest sprouting resistance over Neepawa and Katepwa, while being earlier maturing than Columbus. This line does not have good resistance to loose smut.

Maintenance of breeder seed

Agriculture Canada Experimental Farm, Indian Head, Saskatchewan

Canadian distributor

SeCan Association

Recommended by

Prairie Registration Recommending Committee on Grain

Table 1. Performance of Pasqua and check varieties, Central Bread Wheat Co-operative Tests, 1986-1988*

Variety	Manitoba Yield (10^2 kg/ha)	Saskatchewan Yield (10^2 kg/ha)	Overall	Maturity (days)	Lodging (1-9)**	Hgt. (cm)	Test Mass (kg/hL)	Seed Mass (mg)	Falling No.	Sprouting (1-7)
Pasqua	29.1	25.5	26.4	92.8	2.2	77.9	79.7	33.8	293	3.85
Neepawa	28.3	24.4	27.0	92.6	2.3	79.2	78.9	32.0	214	5.00
Katepwa	29.2	24.7	27.7	92.5	2.5	79.6	79.7	32.7	199	5.15
Columbus	30.4	26.5	24.3	96.2	2.0	84.8	79.7	35.0	355	3.15
Roblin	26.2	23.3	27.0	90.8	1.7	70.2	78.9	34.9	137	–

*Locations: Glenlea, Morden, Portage la Prairie, Brandon, Dauphin, Indian Head, Yorkton, Melfort, Saskatoon, Regina, Ituna
**1 = best

Table 2. Performance of Pasqua and check varieties, Western Bread Wheat Co-operative Tests, 1987-1988**

Variety	Yield (10^2 kg/ha)	Maturity (days)	Lodging (1-9)**	Height (cm)
Pasqua	23.6	98.9	3.5	69.0*
Neepawa	23.7	98.7	3.2	71.2
Katepwa	23.3	97.8	3.7	70.2
Laura	24.1	100.3	3.9	68.9

*Locations: Swift Current, Stewart Valley, Regina, Scott, Kernen, Watrous, Kindersley, Lethbridge, Irricana, Acme, Ellerslie
**1 = best resistance

Table 3. Disease reactions (% and/or reaction) of Pasqua and check varieties, Central Bread Wheat Co-operative Tests, 1987-1989

Year	Variety	Stem Rust	Leaf Rust	Common Root Rot	Loose Smut	Common Bunt	Tan Spot	Septoria Leaf Blotch
1986	Pasqua	5 VR	TR	36	10 R	17 S	VS	5
	Neepawa	10 R	30 M	33	10 R	18 S	VS	6
	Katepwa	5 R	10 M	31	7 R	3 R	VS	5
	Columbus	20 R-MR	TR	43	34 MS	8 I	VS	4
	Roblin	5 VR	1 R	30	23 MR	49 S	S	5
1987	Pasqua	5 VR	3 VR	30	–	17 MR	5+	6
	Neepawa	10 R-MR	40 MS	19	3 R	13 MR	7	5
	Katepwa	3 VR	30 MR-MS	21	6 R	13 MR	7	5
	Columbus	20 R-MR	5 R	31	43 MS	1 R	7	5
	Roblin	5 VR	10 M	16	9 R	55 S	5+	4
1988	Pasqua	3 VR	3 VR	32	31 MS	2 R	5++	–
	Neepawa	10 R	20 MR-MS	29	11 MR	16 MR	5+	–
	Katepwa	5 R	30 MR-MS	36	21 MR	1 R	5+	–
	Columbus	10 R-MR	10 R	39	20 MS	2 R	5+	–
	Roblin	3 VR	3 VR	25	11 MR	21 S	7++	–

Table 4. Disease reactions (% and/or reaction) of Pasqua and check varieties, Western Bread Wheat Co-operative Tests, 1987-1988

Year	Variety	Stem Rust	Leaf Rust	Common Root Rot	Loose Smut	Common Bunt
1986	Pasqua	3 VR	3 VR	47	–	–
	Napayo	20 R	20 MR	45	–	–
	Katepwa	10 R	20 MR	47	–	–
	Laura	5 VR	10 MR	35	–	–
1987	Pasqua	3 R	3 VR	30	13 MR	14 MR
	Napayo	10 R	40 MR-MS	27	3 R	23 MR
	Katepwa	5 R	30 MR-MS	26	5 R	11 R
	Laura	5 R	3 R	21	52 S	63 S

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